What is claimed is:

1. A method for context-sensitive querying and retrieval of search results from a plurality of heterogeneous data sources simultaneously, the method comprising the steps of:

5 a. receiving search query information from a user;

b. interpreting the context of the search query;

c. identifying a plurality of data sources for searching, the data sources being relevant to the identified context of the search query;

d. framing a plurality of search requests pertinent to each of the plurality of data
10 sources identified for searching, each of the search requests being framed in accordance with the search query information in a syntax specific to the data source being searched;

e. executing the plurality of framed search requests via communication protocols specific to each of the data sources being searched, the search requests being
15 executed simultaneously;

f. retrieving search results from the plurality of data sources searched; and

g. consolidating the search results to produce an integrated search result.

2. The method as recited in claim 1 further comprising the step of updating relevance of data sources with respect to the query context, the update being carried out based
20 on the result set and user selection, the updated relevance being used for subsequent searches.

3. The method as recited in claim 1 wherein the step of receiving search query information comprises the step of automated registering of search query information, in response to the user selecting a context within an active application and invoking
25 the search.

4. The method as recited in claim 1 wherein the step of interpreting the context of a search query comprises using statistical or mathematical models for analyzing patterns in the search query for mapping the content of the search query to a set of pre-defined categories in accordance with specific rules.

5. 5. The method as recited in claim 4 wherein the step of interpreting the context of a search query further comprises identifying current activity of the user, and content being processed by the active application the user is currently working in, and the nature of the application.

6. The method as recited in claim 1 wherein the step of identifying a plurality of relevant
10   data sources comprises mapping the identified categories on a set of pre-configured data sources, the mapping being based on relevance factors of data sources with respect to each of the categories, the relevance factors representing appropriateness of content in a data source in relation to the search category.

7. The method as recited in claim 6 wherein the step of identifying the plurality of data
15   sources for searching further comprises the steps of:

   a. recommending the data sources identified as relevant to the context of the search query to the user; and

   b. registering user specified choices for determining the data sources to be actually searched.

20 8. The method as recited in claim 1 wherein the step of consolidating the search results comprises classifying search results using classification algorithms and providing relevance ranking to the search results.

9. A method for dynamically determining and suggesting appropriate data sources to a user from amongst a plurality of heterogeneous data sources for searching context-
25   sensitive information in response to a search query by the user, the method comprising the steps of:

a. interpreting the context of the search query, the context being dependent on the current user activity and the specific content of the search query, the step of interpreting the context comprising the steps of:

    i. using statistical or mathematical models for analyzing patterns in the search query; and

    ii. identifying the current activity of the user, and the application within which the user is working;

b. mapping the context of the search query to a set of search categories;

c. identifying a plurality of data sources relevant to the identified set of search categories using source statistics information, the source statistics information comprising weighted relevance factors of each of the configured data sources with respect to various search categories;

d. recommending data sources identified as relevant to the context of the search query to the user;

e. registering user specified choices for determining the data sources to be searched subsequently;

f. updating the source statistics information in accordance with user specified choices of data sources with respect to the search query categories;

g. updating the source statistics information in accordance with relevance of search results returned by each of the searched data sources; and

h. updating the source statistics information in accordance with implicit and explicit user feedback.

10. The method as recited in claim 9 wherein the step of updating the source statistics information in accordance with implicit and explicit user feedback comprises the steps of:

a. updating weighted relevance factors for the data sources with respect to specific search categories, depending on the retrieved search results actually accessed by the user; and

b. updating weighted relevance factors for the data sources with respect to specific search categories, based on explicit user ratings given to each of the sources.

11. A system for context-sensitive querying and retrieval of search results from a plurality of heterogeneous data sources simultaneously, the system comprising:

a. a user interface receiving search query information;

b. a plurality of source modules, each source module configured to query and retrieve search results based on the search query information, the search results being retrieved from at least one of the plurality of heterogeneous data sources, the source modules storing specific syntax and communication protocol information regarding the associated data sources; and

c. a decision engine interpreting the search query and conducting federated search across relevant data sources, the decision engine comprising:

   i. a classification module interpreting the context of the search query and returned results, the context being defined through the specific content of the search query and optionally the current user activity;

   ii. a source mapping module identifying a plurality of data sources relevant for searching in accordance with the context of the search query; and

   iii. a source module control engine controlling the plurality of source modules for querying and retrieving data from the plurality of heterogeneous data sources.

12. The system as recited in claim 11 wherein the user interface for receiving search query information is invoked from within an application via at least one of: an embedded link in the application, a short-cut key , and an alternate command, and

the interface automatically registers search query information selected in the application.

13. The system as recited in claim 11 wherein the decision engine further comprises a post-processing module merging, consolidating and formatting search results from the plurality of data sources searched via source modules.

14. The system as recited in claim 11 wherein the classification module comprises:

    a. a predefined set of search categories; and

    b. means for using statistical or mathematical models to analyze patterns in the search query and match them to predefined models, in order to map the query to a plurality of the predefined search categories.

15. The system as recited in claim 14 wherein the classification module further comprises means for identifying the current user activity as defined by the current application that the user is working in, in order to get additional context information.

16. The system as recited in claim 11 wherein the source mapping module comprises:

    a. a list of pre-configured data sources;

    b. means for mapping a plurality of the pre-configured data sources to the identified search categories with respect to the context of a search query; and

    c. a recommendation module suggesting the user data sources relevant to the query and registering the user response for identifying data sources to be actually searched, the relevant data sources being the data sources mapped to the identified search categories.

17. The system as recited in claim 16 wherein the source-mapping module further comprises:

    a. a source statistics module storing weighted relevance factors for each of the data sources with respect to the predefined search categories; and

b. means for updating the source statistics module, based on user search patterns as well as explicit and implicit user feedback.

18. The system as recited in claim 11 wherein each source module formulates a query representing the search query information, using specific syntax for the data source associated with the source module.

19. The system as recited in claim 11 wherein each source module communicates with the associated data source using the source-specific communication protocol.

20. The system as recited in claim 19 wherein the source module is configured to perform one or more authorization steps for communicating with the corresponding database, the authorization steps being carried out using specific authorization information required for accessing the data source.

21. The system as recited in claim 11 wherein the system is locally installed on a client machine.

22. The system as recited in claim 11 wherein the system resides on an enterprise server.

23. The system as recited in claim 11 wherein the plurality of heterogeneous data sources comprise:

a. locally accessible data sources;

b. shared data sources available over a network; web accessible data sources;

c. subscription based data sources accessible through an enterprise intranet; and

d. extranet based data sources.

24. A computer program product for providing context-sensitive federated search from a plurality of heterogeneous data sources, the computer program product comprising:

a computer readable medium comprising:

a. program instruction means for receiving search query information from a user;

b. program instruction means for classifying search query information into a set of input search categories;

c. program instruction means for mapping the identified categories to a plurality of
5   data sources relevant for searching in accordance with the context of the search query; and

d. program instruction means for querying and retrieving search results from each of the data sources being searched using source specific syntax and communication protocol information.

10 25. The computer program product as recited in claim 24 wherein the computer readable medium further comprises program instruction means for consolidating and formatting search results from the different sources being searched and presenting them to the user.

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